REMARKS

The Final Office Action dated July 1, 2005, has been received and reviewed.

Claims 1-23 are currently pending and under consideration in the above-referenced application. Of these, claims 1-12 and 14-23 stand rejected, while claim 13 has been objected to for being dependent from a rejected base claim.

Reconsideration of the above-referenced application is respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-12 and 14-23 have been rejected under 35 U.S.C. § 103(a).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Klun in View of Zimmer

Claims 1-12 are rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over the subject matter taught in U.S. Patent 5,667,541 to Klun, et al., (hereinafter "Klun"), in view of the teachings of U.S. Patent 6,054,183 to Zimmer, et al. (hereinafter "Zimmer").

Klun teaches a process for manufacturing abrasive particles and objects using such particles. FIGs. 1 and 2. The abrasive articles, in conjunction with a polymerizable composition and a photoinitiator system, create a coatable composition for use in creating abrasive articles. Col. 2, lines 40-45. The abrasive articles that Klun teaches consist of lapping coated abrasives that employ a backing. Col. 14, lines 55-63.

Zimmer teaches a conditioning pad for Chemical-Mechanical Polishers (CMP) that comprises a substrate, diamond grit distributed evenly over the surface of the substrate, and a thin film of CVD diamond grown onto the diamond grit and substrate. FIG. 1; Col. 3, lines 60-67.

Independent claim 1 recites a method for fabricating an apparatus for conditioning a polishing pad that comprises, among others, providing a quantity of an abrasive material that is degradable or dissolvable by at least one chemical that does not substantially degrade or dissolve a material of a polishing pad to be conditioned by the apparatus.

Klun does not teach or suggest an abrasive material that is degradable or dissolvable by at least one chemical that does not substantially degrade or dissolve a material of a polishing pad. Zimmer also lacks any teaching or suggestion of an abrasive material that is degradable or dissolvable by at least one chemical that does not substantially degrade or dissolve a material of a polishing pad.

Klun's teachings are limited to a host of particular abrasive compounds. Nonetheless, Klun does not provide any teaching with respect to the susceptibility of these abrasive compounds to being dissolved by solvents, let alone their susceptibility to being dissolved vis-à-vis a material of a polishing pad. Further, no justification has been set forth in the outstanding Office Action to support a presumption of such selectivity.

Zimmer teaches a conditioner that includes diamonds. Like Klun, Zimmer provides no teaching or suggestion that the diamonds may be dissolved preferentially, relative to a material of a polishing pad, with a solvent.

Therefore, Klun and Zimmer do not, taken either together or separately, teach or suggest each and every element of independent claim 1, as would be required to maintain the 35 U.S.C. § 103(a) rejection of independent claim 1.

Claims 2-12 are each allowable, among other reasons, for depending either directly or indirectly from allowable independent claim 1.

Claim 6 is additionally allowable because neither Klun nor Zimmer teaches or suggests a method that includes at least partially *impregnating* a supporting substrate with abrasive particles. Klun discloses a slurry of abrasive particles *coated on a surface* of a backing. Col. 12, lines 51-67; Col. 13, lines 1-6. Zimmer teaches a uniform distribution of diamond particles

applied *over* a substrate, with a subsequent layer of CVD diamond grown *onto* the exposed substrate. Col. 4, lines 23-26; Col. 5, lines 49-51. Neither of these references teaches or suggests a method that includes at least partially impregnating the supporting substrate with abrasive particles.

Claim 8 is additionally allowable because neither Klun nor Zimmer teaches or suggests a method of completely *embedding* at least some of the abrasive particles *within* the supporting substrate. As discussed above, the teachings of both Klun and Zimmer are limited to disposing abrasive particles upon a backing and upon a substrate, respectively. Neither reference teaches or suggests *embedding* abrasive particles within a supporting substrate.

Claim 10 is additionally allowable because Klun and Zimmer fail to teach or suggest forming a supporting substrate from the quantity of abrasive material. As discussed above, Klun teaches disposing a slurry *upon* a separate backing, while Zimmer teaches disposing abrasive diamonds *upon* a substrate. Neither reference teaches or suggests *forming a supporting substrate* from the quantity of abrasive material.

Further, neither Klun nor Zimmer provides one of ordinary skill in the art with any suggestion or motivation to combine the teachings of these references in the manner that has been asserted. This is so because neither Klun nor Zimmer teaches or suggests an abrasive material that dissolves preferentially relative to a material of a polishing pad. While Zimmer discloses a narrow concept of a method of conditioning a polishing pad, one skilled in the art would have no motive to combine Zimmer with Klun because Klun never contemplates dissolving the abrasive material anywhere in its voluminous disclosure. Therefore, the only motivation to combine the references was apparently derived from the specification of the above-referenced application.

Therefore, a *prima facie* case of obviousness has not been established against any of claims 1-12. As such,, under 35 U.S.C. § 103(a), the subject matter recited in each of claims 1-12 is allowable over the teachings of Klun and Zimmer.

Withdrawal of the 35 U.S.C. §103(a) rejections of claims 1-12 is respectfully requested.

Klun, in View of Zimmer and Bange

Claims 14-23 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over Klun, in view of teachings from Zimmer and, further, in view of the teachings of U.S. Patent 6,352,471 to Bange, et al. (hereinafter "Bange").

The teachings of Klun and Zimmer are as set forth above.

Bange teaches an abrasive filament, which may be combined with optional additives. Col. 17, lines 20-21. Included among the optional additives are grinding aids that either (1) decrease friction; (2) prevent the abrasives from capping; (3) decrease temperature between the abrasives and the workpiece; or (4) decrease grinding forces. The grinding aids increase the useful life of the abrasive material and may consist of various metals, such as tin and lead. Col. 17, lines 43-67; Col. 18, lines 1-3. The abrasive filaments of Bange may be formed around a preformed *core* of twisted wires. FIGs. 5-7; Col. 9, lines 1-25. The preformed core may be one of several metals. Col. 9 lines 65 – 67; Col. 10, lines 1 – 3.

As set forth above, independent claim 1 is allowable. Therefore, claims 14-23 are each allowable, among other reasons, for depending either directly or indirectly upon allowable independent claim 1.

Claim 14 is additionally allowable because none of Klun, Zimmer, or Bange teaches or suggests a method that includes providing a quantity of abrasive material comprising at least one silicon dioxide, iron, an iron alloy, copper, nickel, and tungsten. Although such materials are mentioned in Bange, Bange refers to these materials only in configurations where they are useful as "grinding aids," not as abrasive materials. The text preceding these lines makes clear that these materials are used to (1) decrease friction; (2) prevent the abrasives from capping; (3) decrease temperature between the abrasives and the workpiece; and (4) decrease grinding forces. Col. 17, lines 43-67; Col. 18, lines 1-3.

Claim 18 is additionally because Klun, in view of Zimmer and Bange, fails to teach or suggest a method of securing at least one curled or twisted filament to the supporting substrate. Bange discloses an abrasive material formed over a preformed core, which may consist of a metal strand or strands that are twisted. FIGs. 5-7; Col. 9, lines 1-25; Col. 9 lines 65 – 67;

Col. 10, lines 1 – 3. Bange does not teach or suggest twisting or curling the abrasive material itself and securing it to a supporting substrate.

Allowable Subject Matter

The indication that claim 13 recites allowable subject matter is gratefully acknowledged. This claim has not been amended to independent form, as the claims from which it depends are believed to be allowable.

CONCLUSION

It is respectfully submitted that each of claims 1-23 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

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